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09/903,591	07/13/2001	Ken Kishida	04329.2607	9579

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WASHINGTON, DC 20005

EXAMINER

NGUYEN, FRANCIS N

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 12/29/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

**Application No.**

09/903,591

**Applicant(s)**

KISHIDA ET AL.

**Examiner**

FRANCIS NGUYEN

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,9,10 and 17-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9,10 and 16 is/are allowed.
- 6) ☒ Claim(s) 1,2,18,19,22,24 and 25 is/are rejected.
- 7) ☒ Claim(s) 17 and 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendment filed on 4/22/2003 is entered. The proposed drawing filed on 4/22/2003 is entered and approved by the examiner.

### ***Drawings***

2. The drawings are objected to because of incorrect word "communicartion" in figure 5. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claims 16-17 are objected to because of the following informalities: incorrect phrase "constituting a computer system together with a computer"( Amendment A, page 3, claim 16, lines 1-2), incorrect word "unit" (Amendment A, page 3, claim 17, line 3). Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2, 18-19, 22, 24, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamakura et al. ( US Patent 6,172,657) in view of Yoshigahara ( US Patent 6,570,566).

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As to **claim 1**, Kamakura et al. discloses a computer system comprising:

a wearable computer main body( **wearable control circuit unit 105b shown in figure 13** );

and a wearable display device ( display unit 103 and interface 110b shown in figure 13 are provided independently from control circuit 105b ) provided independently of said wearable computer main body, wherein said wearable display device includes

a communication interface used to communicate with the wearable computer main body by radio ( **since electromagnetic waves for transmission of signals between control circuit unit and display unit**, column 15, lines 56-58, figure 13, communication interface is inherent to serve the transmitting function);

a random access memory ( RAM 504 shown in figure 13);

a display monitor ( display 103 shown in figure 13); and

a display controller which controls said display monitor and draws in said RAM display data to be displayed on said display monitor based on drawing command information from said wearable computer main body ( figure 14 shows display controller 505 in interface 110b being separate from wearable control circuit unit 105b shown in figure 13, also note Kamakura et al. discloses **display of piping system on display unit 103 and electronic information give various information to the operator** , column 11, lines 2-10, also see column 17, lines 39-45, **operator uses instruction ring 606 to select menu option, and a predetermined operation is carried out**, column 17, lines 46-51 , this corresponds to the claimed drawing command information) .

However, Kamakura et al. fails to expressly teach VRAM. Yoshigahara teaches display controller 712 performing display control of image display unit 714/715 accessing VRAM 713(

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column 17, lines 59-63. Since image display unit 714/715 has display configuration of head mount display ( column 1, lines 30-32) which is similar to aforementioned display 103. It would have been obvious to one skilled in the art at the time of the invention to utilize the apparatus of Kamakura et al. then substitute RAM 504 with VRAM for storing image data as taught by Yoshigahara to obtain the apparatus Kamakura et al. modified by Yoshigahara because it will provide display of image/video data with high speed.

As to **claim 2**, the system according to claim 1, wherein said wearable display device has a headset-mounted casing wearable on a person's head ( **casing shown in figure 1b**).

As to **claim 18**, the computer system according to claim 1, wherein said display controller functions as a graphic accelerator ( displayed image shown in figure 17(b) , video images, column 11, lines 44-59, column 12, lines 9-11 indicate function of graphics accelerator is inherent in interface 110b for providing video images ).

As to **claim 19**, the computer system according to claim 18, wherein said display controller repeatedly reads data from said VRAM, converts the read data into display data or refreshing, and supplies the converted data to said monitor ( since display controller 505 interfaces with frame memory shown in figure 14, normal display control functions are inherent as to reading video data, refreshing and communicating image data).

As to **claim 22**, Kamakura et al. discloses a display unit provided independently of a computer main body( display unit 103 and interface 110b shown in figure 13 are provided independently from control circuit 105b ), comprising:

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a communication interface used to communicate with the wearable computer main body by radio ( since **electromagnetic waves for transmission of signals between control circuit unit and display unit**, column 15, lines 56-58, figure 13, communication interface is inherent to serve the transmitting function);

a random access memory ( RAM 504 shown in figure 13);

a display monitor ( display 103 shown in figure 13); and

a display controller which controls said display monitor and draws in said RAM display data to be displayed on said display monitor based on drawing command information received by said communication interface by radio ( figure 14 shows display controller 505 in interface 110b being separate from wearable control circuit unit 105b shown in figure 13, also note Kamakura et al. discloses **display of piping system on display unit 103 and electronic**

**information give various information to the operator**, column 11, lines 2-10, also see column 17, lines 39-45, **operator uses instruction ring 606 to select menu option, and a predetermined operation is carried out**, column 17, lines 46-51, this corresponds to the claimed drawing command information) .

However, Kamakura et al. fails to expressly teach VRAM. Yoshigahara teaches display controller 712 performing display control of image display unit 714/715 accessing VRAM 713( column 17, lines 59-63. Since image display unit 714/715 has display configuration of head mount display ( column 1, lines 30-32) which is similar to aforementioned display 103. It would have been obvious to one skilled in the art at the time of the invention to utilize the apparatus of Kamakura et al. then substitute RAM 504 with VRAM for storing image data as

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taught by Yoshigahara to obtain the apparatus Kamakura et al. modified by Yoshigahara because it will provide display of image/video data with high speed.

As to **claim 24**, the computer system according to claim 22, wherein said display controller functions as a graphic accelerator (Kamakura et al. , displayed image shown in figure 17(b) , video images, column 11, lines 44-59, column 12, lines 9-11 indicate function of graphics accelerator is inherent in interface 110b for providing video images ).

As to **claim 25**, the computer system according to claim 24, wherein said display controller repeatedly reads data from said VRAM, converts the read data into display data or refreshing, and supplies the converted data to said monitor (Kamakura et al. , since display controller 505 interfaces with frame memory shown in 14, normal display control functions are inherent as to reading video data, refreshing and communicating image data).

6. Claims 20-21, 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamakura et al. in view of Yoshigahara and further in view of Ruppert et al. ( US Patent 6,236,969).

As to **claim 20**, Kamakura et al. modified by Yoshigahara fails to expressly teach a control section having a microcomputer which controls said communication interface. Ruppert et al. teaches a microprocessor unit 32 controlling an IR interface 97, a cellular interface unit 30 shown in figure 5. It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize the apparatus of Kamakura et al. modified by Yoshigahara then provide a microprocessor controlling communication interface as taught by Ruppert et al. to obtain the apparatus Kamakura et al. modified by Yoshigahara and Ruppert et al. because it

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would allow direct control of communication. Since Ruppert et al. teaches microprocessor unit 32, this also controls VRAM, display monitor and display controller

As to **claim 21**, Kamakura et al. modified by Yoshigahara and Ruppert et al. discloses said control section recognizing a voice signal input from a microphone ( Ruppert et al., microprocessor 32 interfacing microphone 18 via voice recognition processing unit 100 as shown in figure 5) and sends the voice signal as an operation control command to said wearable computer main body via said communication interface (Ruppert et al., microprocessor 32 also interfaces to IR interface 97 and RF interface control circuitry 90 as shown in figure 5).

As to **claim 26**, Kamakura et al. modified by Yoshigahara fails to expressly teach a control section having a microcomputer which controls said communication interface. Ruppert et al. teaches a microprocessor unit 32 controlling an IR interface 97, a cellular interface unit 30 shown in figure 5. It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize the apparatus of Kamakura et al. then provide a microprocessor controlling communication interface as taught by Kamakura et al. to obtain the apparatus Kamakura et al. modified by Yoshigahara and Ruppert et al. because it would allow direct control of communication.

As to **claim 27**, Kamakura et al. modified by Yoshigahara and Ruppert et al. discloses said control section recognizing a voice signal input from a microphone ( Ruppert et al., microprocessor 32 interfacing microphone 18 via voice recognition processing unit 100 as shown in figure 5) and sends the voice signal as an operation control command to said wearable computer main body via said communication interface (Ruppert et al., microprocessor also interfaces to IR interface 97 and RF interface control circuitry 90 as shown in figure 5).

***Allowable Subject Matter***

7. Claims 9-10 and 16 are allowed.

8. Claims 17, 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As to claims 9-10 and 16, none of prior art discloses a visual line detecting unit which detects a user's visual line position, a controlling unit which controls an image captured by said camera based on a detection result of said visual line detecting unit so that said camera can capture an image corresponding to said user's visual line position.

As to claim 17, none of prior art teaches communication interface works as a bus bridge for interconnection between a bus in a wearable computer main body and a bus in a display unit.

As to claim 23, none of prior art teaches communication interface works as a bus bridge for interconnection between a bus in a computer main body and a bus in a display unit.

***Response to Arguments***

9. Applicant's arguments filed on 4/22/2003 have been fully considered but they are not persuasive.

Applicant's argument that cited art failing to teach all elements of claim 1 is not valid because combination of Kamakura et al. and Yoshigahara teach all elements of claim in the rejection as described above( paragraph 5).

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Applicant's argument that cited art failing to teach a display unit provided independently of a computer main body is not valid because Kamakura et al. teaches a display unit provided independently of a computer main body ( display unit 103 and interface 110b shown in figure 13 are provided independently from control circuit 105b ).

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### CONCLUSION

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent	Carroll	6,249,427
US Patent	Min	6,184,907
US Patent	Erekson	6,622,018

US Patent      Nishitani et al. 5,629,714

US Patent      Kwon              6,424,347

US Patent      Reddy              6,317,135

Reference Carroll is made of record as it discloses a flexible wearable computer comprising a graphics accelerator.

Reference Min is made of record as it discloses graphics accelerators commonly using VRAMs.

Reference Erekson is made of record as it discloses a hand-held computer system comprising Bluetooth-enabled devices , wherein commands are transmitted via radio signals.

Reference Kwon is made of record as it discloses an interface control apparatus for frame buffer, display controller and display bus.

Reference Reddy is made of record as it discloses a shared memory graphics accelerator, VRAM , DRAM frame buffers.

**12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Francis Nguyen ( 8:00AM to 4:30PM) whose telephone number is (703) 308-8858.**

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe**, can be reached at **(703) 305-4709**.

***Any response to this action should be mailed to:***

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Art Unit: 2674

**or faxed to:**

**(703) 872-9314 ( for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington,  
VA, Sixth Floor (Receptionist).


Any inquiry of a general nature or relating to the status of this application or proceeding should  
be directed to the Technology Center 2600 Customer Service Office whose telephone number is  
(703) 306-0377.

  
FRANCIS NGUYEN

Examiner

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December 19th, 2003

  
RICHARD WJERPE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600